NAVSEA
CRANE
Surface Warfare Center Division

NSWC Crane

“Harnessing the Power of Technology for the Warfighter”

NAVSEA
CRANE
Surface Warfare Center Division

SOPMOD

Program Overview

15 May 2003

NAVSEA CRANE
Surface Warfare Center Division

SOPMOD Program Overview

NDIA
NATIONAL DEFENSE INDUSTRIAL ASSOCIATION

Presented to NDIA Small Arms Symposium

Harnessing the Power of Technology for the Warfighter

NAVSEA
CRANE
Surface Warfare Center Division

Overview Agenda

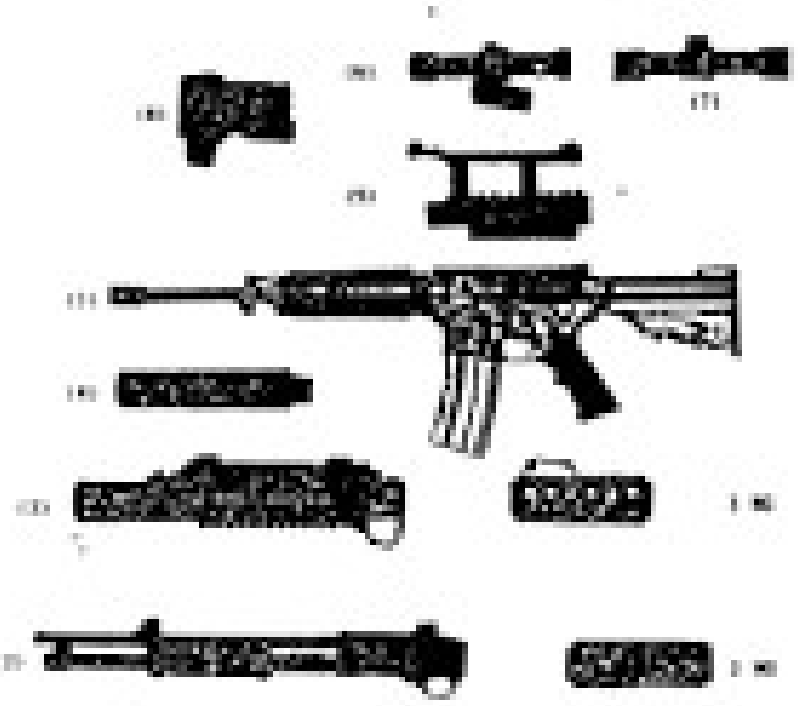
- **Background and Threat**
- **Structure of the Program**
- **Mission / Capabilities**
- **Block 1 Overview**
- **Block 2 / Increment 2 Overview**
- **SOPMOD Future**
- **Questions and Comments**

NAVSEA
CRANE
Surface Warfare Center Division

Background And Threat

HISTORIC BACKGROUND

1970-1990 - **Duct Tape and Hose Clamps for Carbine and Rifle Accessories. Multitude of Non-standard Optical Sights,**



Sept 1989 – **First Attempt to Standardize - USSOCOM SOST Modular Close**

NAVSEA
CRANE
Surface Warfare Center Division

HISTORIC BACKGROUND

15 May 1992 - **SOPMOD MNS Signed**

15 Sept 1993 - **Original ORD Validated - BOIP's Were Originally Low, Since Component Commands Were Cautious About Buy-in to a New Joint Program**

1994 to 1998 - **As Commands Accepted SOPMOD, Demand for Capabilities and Quantities of Items Increased, Funding Did Not. ORD Was Amended 4 Times**

NAVSEA CRANE
Surface Warfare Center Division

RECENT BACKGROUND

May 99 – FIRST PROGRAM TRANSFORMATION
USCINCSOC/PEO-SP Directive to SOPMOD PMO to Study and Fix the M4A1 Carbine. Extraction Parts Set #1 fielded to Navy and Air Force in July 1999

***Aug 99 -* 7th Milestone III Decision (Last 5 of 17 Initial Items). PEO-SP Directed PMO and Command Representatives to Plan Evolutionary Block Upgrades (Unconstrained Requirements Forecast), and to Customize Kit BOIP Composition by Military Unit Missions.**

***29 October 1999 -* ORD Amendment 5, Added MNVS, *SPR*, UPM, Soft and Hard Cases, and Increased BOIP From 1961 Kits to 2972 Kits, Without Additional Funding**

NAVSEA CRANE
Surface Warfare Center Division

RECENT BACKGROUND

September 2000 - **Plus-up, $5M in General Procurement and $0.9M Earmarked for Grenade Launcher Research.**

Sep 2001-Present – **Future Projects Re-planned Due to Direct Support of Immediate War Requirements and Huge Infusions of DERF and Supplemental Funds**

7 May 2002 – ***SECOND PROGRAM TRANSFORMATION*** **Spin Off…SOF Weapons Program**

May 2003 – **SOPMOD PMO Directed to Plan *THIRD***

THREAT

Assault Rifle/Advanced Combat Rifles

7.62x39 AK-47

5.45x39 AK-74

5.45x39 AN-94

5.8mm A-97

Light Machineguns

7.62x39 RPD

7.62x54 PKM

7.62x39 RPK

5.45x39 RPK-74

5.8mmType 97

Compact Assault Rifles

5.45x39 AK-74U

5.45x39 A91

7.62 A91

7.62x39 OT14

Compact Sniper Rifles

9x39 VSS

9x39 OTs-14

9x39 VSK-94

Semi-Auto Medium & Heavy Sniper Rifles

7.62X54 SVDS

7.62x54 SVU

12.7 V-94

Anti-Diver Weapons

4.5x39 SPP-1

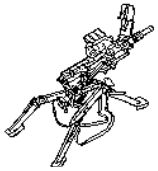
5.66 APS

55MM DP-61

45MM DP-64

Grenade Launchers & Grenade Machineguns

40mm GP-30


30mm AGS-17

30mm AGS-30

35mm W87

Light Anti-Tank / Assault Weapons

RPG-7

RPG-18

RPG-22/26

RPG-27/RShG1

RPO-A

Structure

NAVSEA
CRANE
Surface Warfare Center Division
One Corporation
One Mission
One Team
Ordnance
Small Arms
Pyrotechnics
Ground Ordnance
Surface Ordnance
Electronics
Chem-Bio
Electrochemical Pwr Systems
Displays & Peripherals
Acoustic Sensors
Microelectronics Computers & Processors
Physical Security
Electronic Warfare
Electronic Countermeasures & Surveillance
Night Vision/ Electro-Optics
Microwave Components
Radar
Fleet Support
Acquisition
Legacy Systems/ Products
Fleet Support
Acquisition
Legacy Systems/ Products
Engineering
Logistics
Maintenance
Acquisition Support
Program Management

NAVSEA CRANE
Surface Warfare Center Division

SOPMOD Bosses

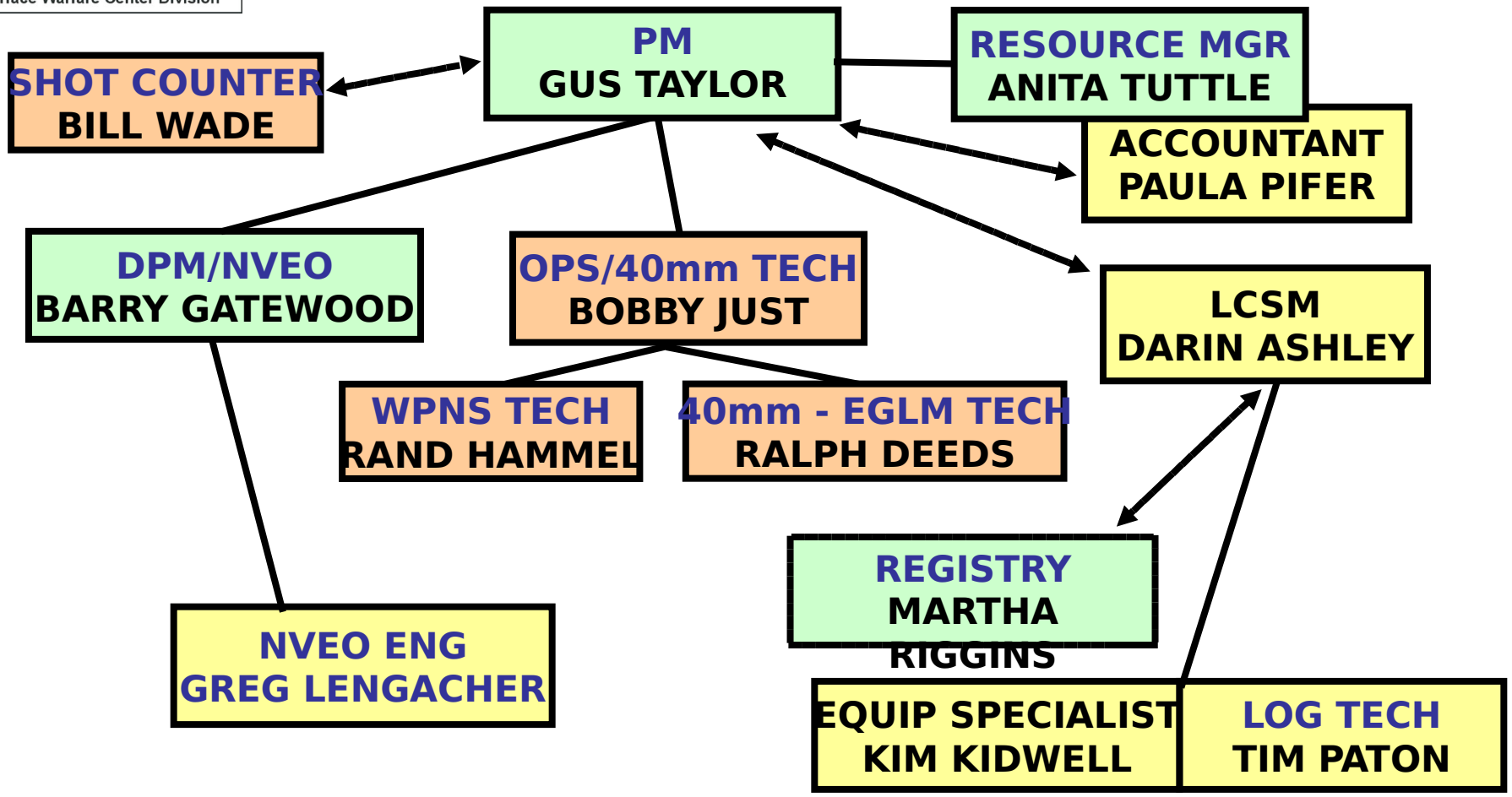
Harnessing the Power of Technology for the Warfighter

NAVSEA
CRANE
Surface Warfare Center Division

External Clients

Crane Supports “Paying Customers” outside of USSOCOM

SOPMOD Structure



Program Core

Part Time, Temp Hires, External Profits

SOST, USMC, FCT, UCPU, Ext Customers

Direct Supervision

Indirect Supervision/Part Time

NAVSEA CRANE
Surface Warfare Center Division

Quality

SOPMOD, as part of NSWC Crane, is ISO 9001 Certi

PERRY JOHNSON REGISTRARS, INC.

Certificate of Registration

Crane Division Naval Surface Warfare Center
300 Highway 361
Crane, IN 47522

ISO 9001:1994

Engineering, Logistics, Maintenance, Acquisition and Program Management of Products and Services that Support the Fleet in the Areas of Electronics, Electronic Warfare and Ordnance

Our Quality System is a set of formally documented activities that are carried out to ensure that we satisfy our customers' requirements.

Our Quality System is based on, and officially certified to, the requirements of ISO 9001-1994, an international standard for quality assurance in design, dev

p **in**

s

U.S. Special Operations Command
SOPMOD

ISO 9001
NAVSEA Crane
Surface Warfare Center Division

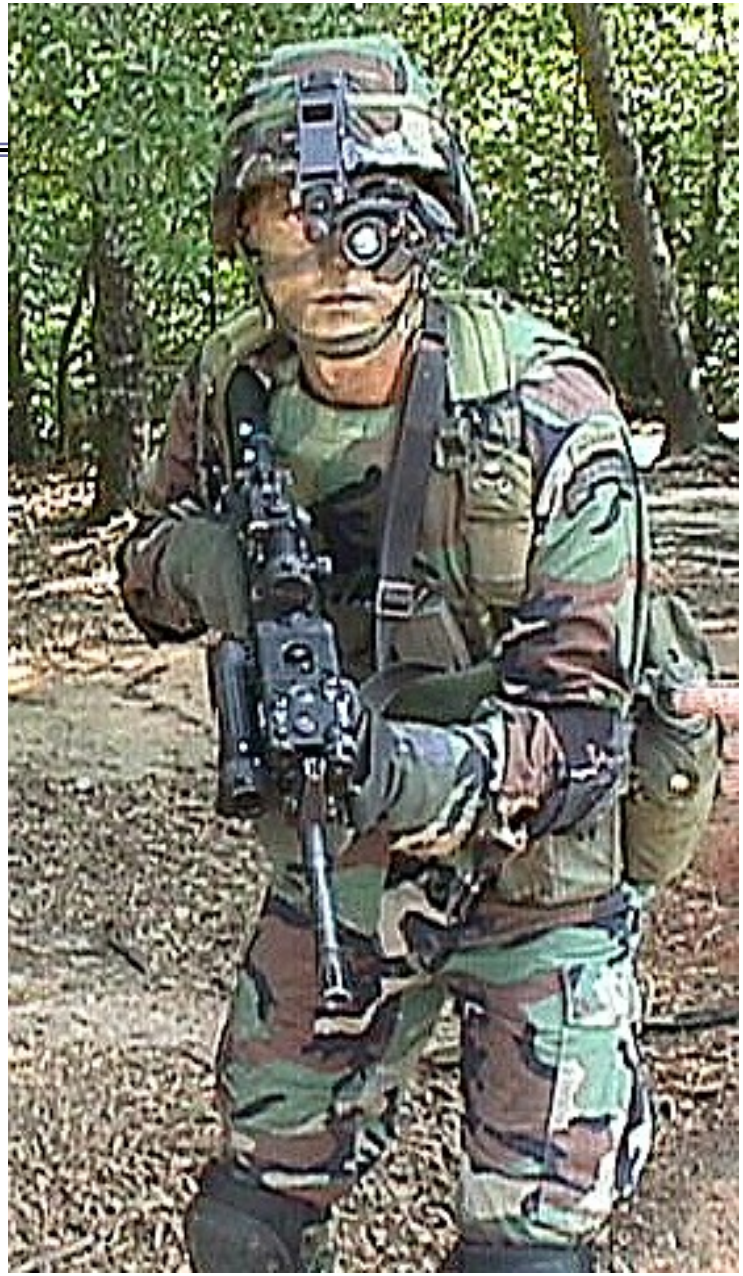
NAVSEA
CRANE
Surface Warfare Center Division

Mission and Capabilities

Mission

The SOPMOD Program Management Office at NSWC Crane, IN, will provide standardized, versatile weapons accessories to meet needs across SOF mission scenarios. These accessories will increase operator survivability and lethality by enhanced weapon performance, target acquisition, signature suppression, and fire control. SOPMOD PMO will provide these accessories when they are operationally suitable, affordable,

NAVSEA
CRANE
Surface Warfare Center Division



Capabilities Required:

- ***Standardized versatile weapons accessories***
- ***Modular- meets needs across SOF mission scenarios***
- ***Increased operator survivability and lethality by enhanced target acquisition, signature suppression, and fire control***
- ***Evolutionary Acquisition Subprograms:***
  - ***Block I (Plus Platform Mods and Phased Replacements)***
  - ***Block II / Increment II (New and Combined***

SOPMOD Block 1

SOPMOD Block 1

NAVSEA CRANE
Surface Warfare Center Division

DESCRIPTION

Capabilities Provided:

- **Day and night target acquisition, identification, and precision fire out to max range (600m)**
- **Signature suppression to protect from enemy detection and hearing loss**

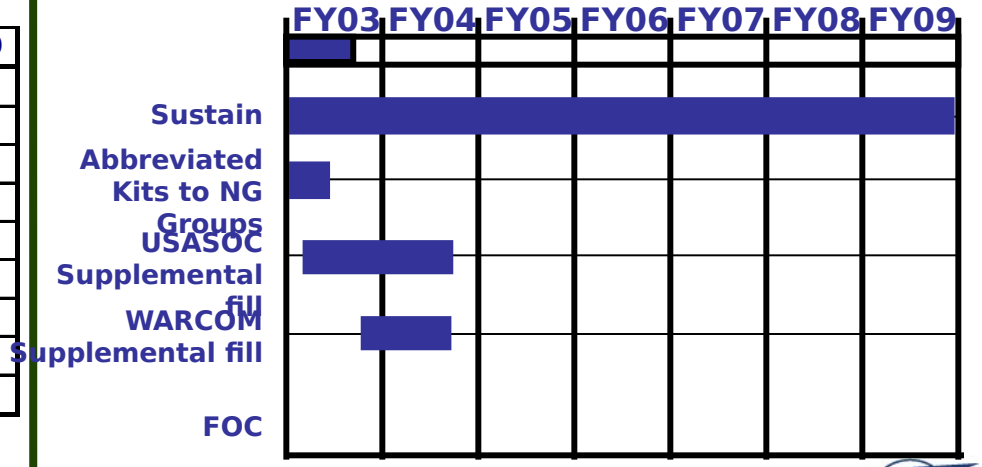
ORD Amendment 5, para 4.b., 29 October 1999, clarified in ORD Annex

PROJECT SHARE OF SOPMOD ($M)

APPR, ($M)	PRIOR	FY03	FY04	FY05	FY06	FY07	FY08	FY09
RDT&E								
PGM								
FCT								
SOST								
CONG+								
PROC								
PGM								
CONG+								
OMDA								

SUPPLEMENTALS ARE UNDETERMINED
POM IS UNLOCKED
Approx $50M Prior Total to date

SCHEDULE



POC: Darin Ashley
Email: ashley_d@crane.navy.mil
Commercial Phone: (812) 854-65
Commercial Fax: (812) 854-4405

Harnessing the Power of Technology for the Warfighter

NAVSEA CRANE
Surface Warfare Center Division

SOPMOD Block 1

62,000 End Items In the Field of Which 29,416 Are Under Serialized Joint Registry Control

AN/PVS-17 Congressional Plus-Up

Quote From a Special Forces Sergeant in Afghanistan:

- **The MNVS is the best piece of kit since the poncho liner. The only way you'll get it away from me is to pry it from my cold, dead hand. It returns to zero far better than any other sight/mount issued; it's clarity is excellent; and the magnification gives us a capability that PVS-7 with PEQ-2 doesn't.**

AN/PVS-17 Congressional Plus-Up

Plus-Up History:

- **Un-requested for 2003**
- **HASC Mark $6M**
- **SASC Mark $0**
- **Committee/Bill $3.6M**
- **$**

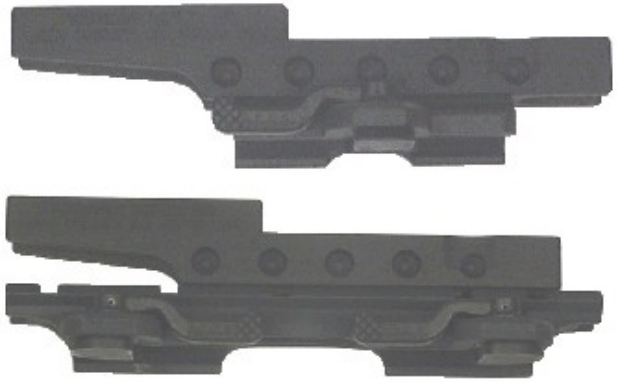
AN/PVS-17A's for M4A1
~ 700 each

N/PVS-17 (5.2X) for User Assessme
On Other Weapons - 9 each

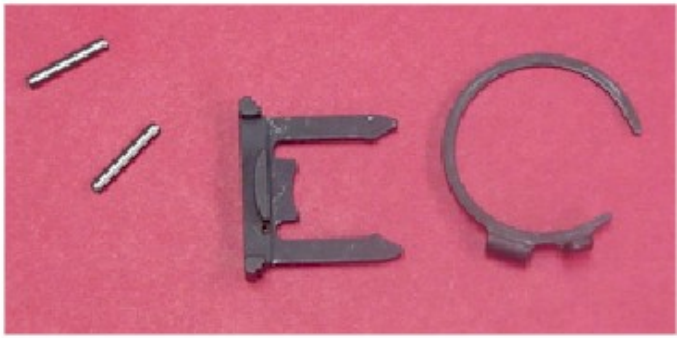
SOPMOD Block I Platform Modifications

ACOG 4x ANTI-REFLECTIVE DEVICE (ARD)

AN/PEQ 2 PATTERN GENERATORS



MNVS AN/PVS 17 THROW-LEVER MOUNTS



IMPROVED QD SUPPRESSOR ATTACHMENT

SOPMOD Block I Phased-Replacements

ENHANCED COMBAT OPTICAL SIGHT - NAVY (ECOS-N)

REPLACES Or SUPPLEMENTS

COMPLETE

ACOG Reflex Sight (In WARCOM ONLY)

VISIBLE BRIGHT LIGHT II (VBL II)

REPLACES Or SUPPLEMENTS

IN - PROCESS

VISIBLE LIGHT ILLUMINATOR

SOPMOD Block 2 / Increment 2

NAVSEA
CRANE
Surface Warfare Center Division

Grenade Launcher Day / Night Sight Mount (GLD/NSM)

Capabilities Provided:

- **Day and night precision fire (± 20m) out to max range (400m)**
- **Compatible with both 9” and 12” M203 Grenade Launchers**

ORD Amendment 5, para 4.b.(9), 29 October 1999, clarified in ORD Annex

POC: Barry Gatewood
Email: gatewood_b@crane.navy.mil
Commercial Phone: (812) 854-3843
Commercial Fax: (812) 854-4405

Grenade Launcher Day / Night Sight Mounts (GLD/NSM)

AN/PSQ-14 GLDNSM

Background/Status:

- **128 each provided Navy Special Warfare Command for a small purchase/User Assessment summer of 2000**
- **Transitioned to Army Soldier Enhancement Program**

AN/PSQ-18 GLDNSM

Background/Status:

- **Low-Rate Initial Production Complete**
- **Used in both Enduring Freedom and Iraqi Freedom**
- **US Army Testing along with AN/PSQ-14**
- **Milestone-C-8 Pending for Full Rate Production**

POC: Barry Gatewood
Email: gatewood_b@crane.navy.
Commercial Phone: (812) 854-38
Commercial Fax: (812) 854-4405

NAVSEA
CRANE
Surface Warfare Center Division

SOPMOD II (Future)

Family of Muzzle Break/Suppressors (FMBS)

Shot Counter

Miniature Day / Night Sight (MDNS)

(Congressional Interest)

Enhanced Grenade Launcher Module (EGLM)

(Congressional Interest)

Family of Muzzle Break / Suppressors (FMBS)

BLACK =Block II New / Combined Capabilities
GREEN=Block 1 Platform Mods/Phased Replacements

Carbine MBS

5.56 Machinegun MBS

7.62 Machinegun MBS

CQBR MBS

POC: Rand W. Hammel
Email: hammel_r@crane.navy.mil
Commercial Phone: (812) 854-5082
Commercial Fax: (812) 854-1044

Harnessing the Power of Technology for the Warfighter

Miniature Day / Night Sight (MDNS) Development

BLACK =Block II New / Combined Capabilities
Blue=Block 1 Platform Mods/Phased Replacements

Enhanced Combat Optical Sight (ECOS)
And/or ACOG 4x & Reflex Replenishments

Clip-on Night Vision Device (CNVD)
And/or AN/PVS 17 Replenishments

Backup Iron Sight II (BIS II)

Rail Interface System II (RIS II)

Visible Bright Light III (VBL III)

Integrated Pointer Illuminator (IPIM)
And/or AN/PEQ2/AN/PEQ 5 Replenishments

MDNS Congressional Plus-Up

Funding History:

- **"Invented" by Congress in October 2001 in response to several separate lobbying efforts**
- **$1.5M R&D for 2001 (Un-requested)**

Competition Closed May 7th

Source Selection in Process

- **Substantial Program funding for production**

Enhanced Grenade Launcher Module (EGLM)

Capabilities Provided:

- **First-round effect on target day and night out to max range (400m)**
- **Retro-compatible with existing munitions, plus longer NATO munitions**

POC: Bobby Just
Email: just_r@crane.navy.mil
Commercial Phone: (812) 854-51
Commercial Fax: (812) 854-4405

Harnessing the Power of Technology for the Warfighter

NAVSEA CRANE
Surface Warfare Center Division

SOF GRENADE LAUNCHER CAPABILITY MAP

FY 03 FY 04 FY 05 FY 06 FY 07 FY 08 FY 09

GLDNSM "M203 Rail System"

Enhanced Grenade Launcher Module
EGLM

Enhanced 40mm
HEDP-TM, CLOSE-RANGE, IR FLARE

Compatible With M203 & M203E1

End of M203 System Life

Harnessing the Power of Technology for the Warfighter

EGLM Congressional Plus-Up

Plus-Up History:

- **Program Invested 30K in 2000**
- **873K R&D for 2001 (Un-requested)**
- **$200K FCT in FY 03**
- **$700K FCT in FY 04**

Competition for Briefing Samples
Due to Deliver this Month

Solicitation Opens This Summer

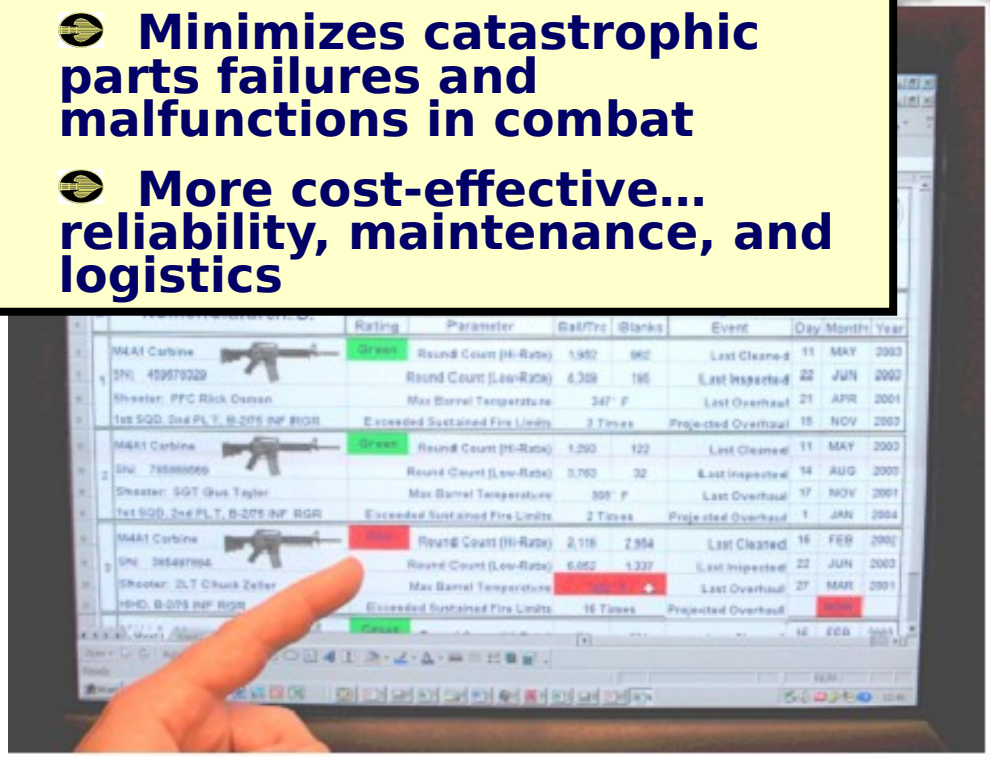
- **Substantial Program Funding for Production**

NAVSEA
CRANE
Surface Warfare Center Division

Shot Counter

Capabilities Provided:

- **Enables unit armorers to determine number of rounds fired**
- **Minimizes catastrophic parts failures and malfunctions in combat**
- **More cost-effective… reliability, maintenance, and logistics**



Maintenance Software

POC: Bill Wade
Email: wade_w@crane.navy.mil
Commercial Phone: (812) 854-587
Commercial Fax: (812) 854-1044

Harnessing the Power of Technology for the Warfighter

NAVSEA CRANE
Surface Warfare Center Division

Second Program Transformation

- 7 May 2002
- Spin Off SOF Weapons Program –

U.S. Special Operations Command
SOF WEAPONS

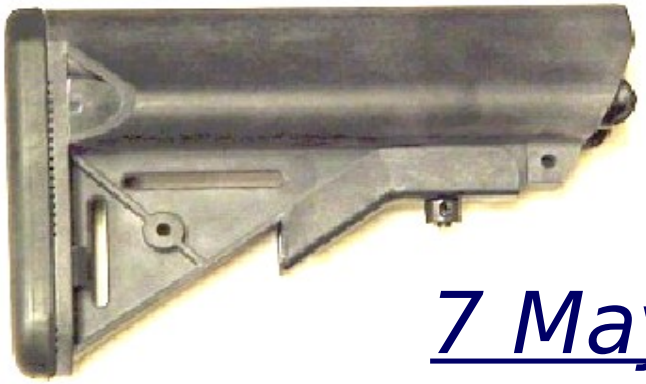
  - Separate out Mark 12, 5.56 LR 77 Grain Ammo, and M4A1 Carbine Upgrades
  - Consider Other SOF Weapons in Accessory Specification Development

- New SOPMOD Program Charter from PEO-SP, August 2002

SOPMOD M4A1 Carbine Platform Modifications

M4A1 EXTRACTION PARTS SET #2

SLOPING CHEEKWELD BUTTSTOCK (SCB)



HIGH RELIABILTY MAGAZINE (HRM)

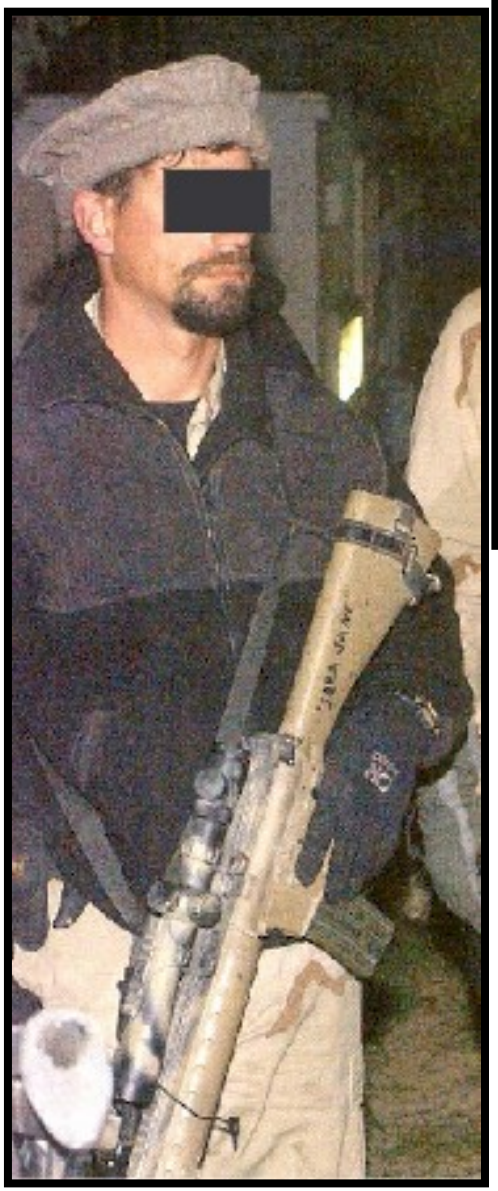
7 May 2002 Transitioned to:

U.S. Special Operations Command
SOF WEAPONS

Harnessing the Power of Technology for the Warfighter

NAVSEA
CRANE
Surface Warfare Center Division

Special Purpose Receiver (Mk 12)



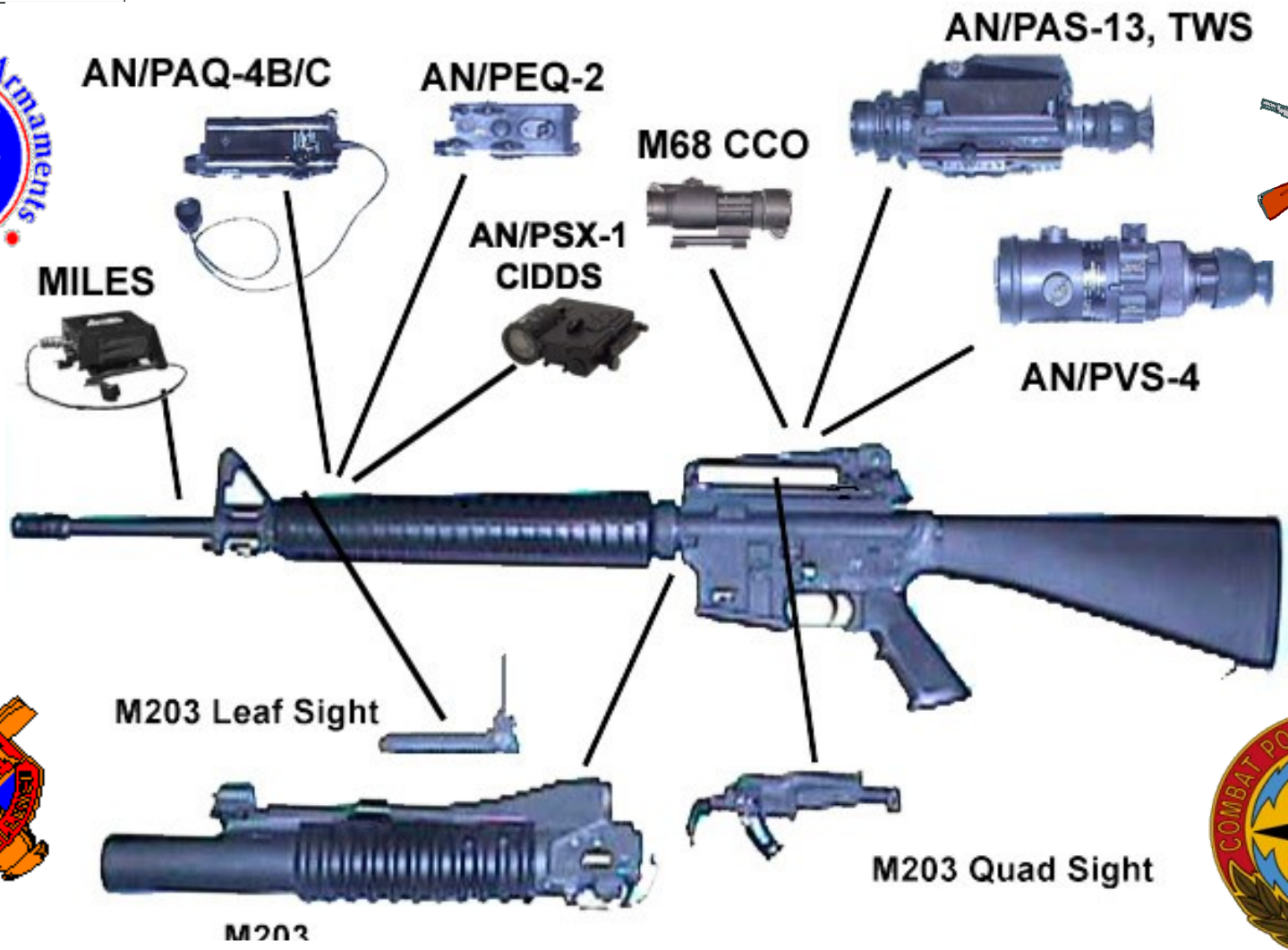
7 May 2002
Transitioned to:

U.S. Special Operations Command
SOF WEAPONS

AIRBORNE
UNITED STATES SPECIAL OPERATIONS COMMAND

NAVSEA
CRANE
Surface Warfare Center Division

Army Modular Weapon System (MWS)



Close Combat Armaments Center

FOLLOW ME

COMBAT POWER FOR LEADERS

Continuous Coordination

SOF Combat Rifle (SCR)

NAVSEA CRANE
Surface Warfare Center Division

BASIC WEAPON CONCEPT

CQB & Long Range Variants
ght and Heavy Calibers

DESCRIPTION

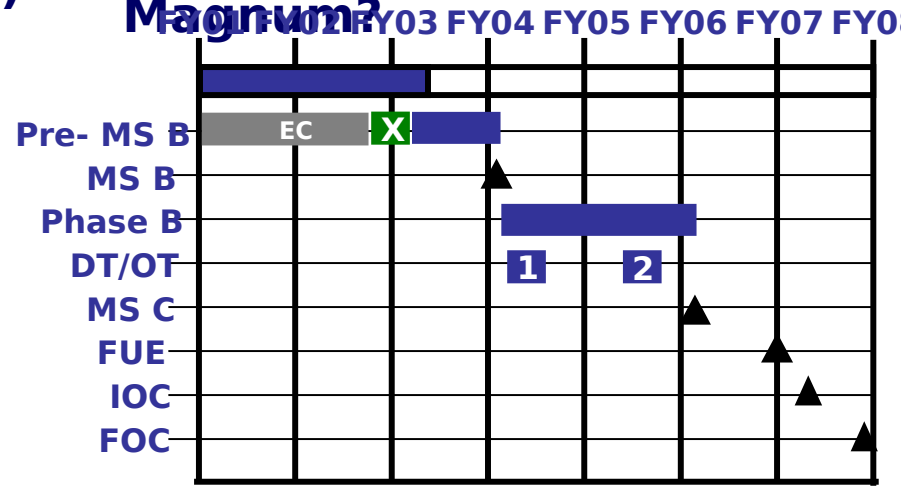
- Carbine, CQB, and Light Sniper / Auto Rifle Variants (Light & Heavy)
- Multiple Caliber Interchangeable Sub-Modules
  - 5.56 NATO, 7.62X39, 5.45X39
  - New 6.8X43mm???
  - 7.62 NATO, .338 Short Magnum?

PROJECT SHARE OF SOPMOD ($M)

APPR, ($M)	PRIOR	FY03	FY04	FY05	FY06	FY07	FY08	FY09
RDT&E								
PGM								
FCT								
SOST								
CONG+								
PROC								
PGM								
CONG+								
OMDA								

SUPPLEMENTALS ARE UNDETERMINED
POM IS UNLOCKED

SCHEDULE



POC: Troy Smith
Email: smith_troy@crane.navy.mil
Commercial Phone: (812) 854-5858
Commercial Fax: (812) 854-1044

U.S. Special Operations Command SOF WEAPONS

Harnessing the Power of Technology for the Warfighter

XM-8

Newly Opened Coordination

Multiple Attachment Point System (MAPS)

SOPMOD Future

Client Weapons

NAVSEA CRANE Surface Warfare Center Division

SOPMOD ORD 5 - Core Small Arms (Threshold) …Design For Use On:

- M4A1 Carbine
- M203 Grenade Launcher

Separate ORDs - Future Weapons ….Plan For Integration:

- SOF Combat Rifle
- XM-8?
- FCR?

ORD Annexes (CDD/CPD)- Additional Weapons Harden For Use On, and Possibly Develop Versions For:

- CQBR (Modified M4A1 Carbine)
- MK46 LMG / M249 SAW Machineguns
- MK48/ M240-N/M240/M240-B Machineguns
- M14 and EBR (M14 PIP) Rifle
- AK-47/AK74 Series Assault Rifle
- MK11/SR 25 Sniper Rifle
- MK12 Sniper Rifle
- M-24 Sniper Rifle
- 300 WINMAG Sniper Rifle
- 50 SASR & M107 50 cal Sniper rifle
- Mk-19 40mm Machinegun
- M2-HB .50 Cal Machinegun
- M72 LAAW
- AT4-CS
- MAAWS
- Remington 870
- Mossberg 500

SOPMOD Program Transformation

NAVSEA
CRANE
Surface Warfare Center Division

3rd PROGRAM TRANSFORMATION

- CJCSI 3170.01 Revision Update - Joint Capabilities Integration and Development System (JCIDS)----***Execute SOPMOD Program Transformation FY03-04***

- SOPMOD Block 1 & AN/PSQ-18: Transformed to ***Sustainment / Phase Replacement***

- Rest of SOPMOD Block 2: Transformed with ***New Requirements Documents*** – New Program (SOF Weapons Accessories – Not Yet Named)

3rd PROGRAM TRANSFORMATION

- "Old" SOPMOD Block 2:

- CDD to Convert EGLM into Separate Program

- Capstone Requirements Document (CRD) to Address other Accessories

- CDD/CPD for each Subsystem Determines Accessories for other SOF Weapons (Mk46, Mk48, SCAR, CQBR, etc.)

NAVSEA CRANE
Surface Warfare Center Division

SOF WEAPON & ACCESSORY CAPABILITY TOP MAP

FY 03 FY 04 FY 05 FY 06 FY 07 FY 08 FY 09

SOF Combat Assault Rifle

SCAR

SOPMOD 3rd Transformation on SOF Weapon Accessories (Name?)

New "SOPMOD" is Forward -Compatible With SCAR, EGLM, Other

Retro-Compatible With M4A1, Some SOPMOD Block 1

Enhanced Grenade Launcher Module

EGLM

40mm HEDP-TM
Close Range
IR Flare

SOPMOD Enters 4th and Last Phase: Sustainment

End of M4A1, M203, and SOPMOD System Life

Harnessing the Power of Technology for the Warfighter

NAVSEA
CRANE
Surface Warfare Center Division

FUTURE
SOF TACTICAL FIREPOWER

SCAR

EGLM

SOPMOD

AMMO

Harnessing the Power of Technology for the Warfighter

Questions, Comments, or Guidance?
UNITED STATES
SPECIAL OPERATIONS COMMAND
ISO 9001
NAVSEA Crane
Surface Warfare Center Division
U.S. Special Operations Command
SOPMOD

NSWC Crane

“Harnessing the Power of Technology for the Warfighter”

Presentation presented by:

Mr. Gus Taylor, SOPMOD Program Manager
Code 4081, Building 2521, ATTN: SOPMOD
Email: taylor_gus@crane.navy.mil
Commercial Phone: (812) 854-5645
Commercial Fax: (812) 854-4405